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QUIZZES

Unit Wise Test-2 (Biological Molecules and Enzymes)



30 Questions



25 min

Topics

Introduction to biological molecules,
Importance of Water, Carbohydrates,
Proteins, Lipids, Nucleic acids, Conjugated
molecules, Introduction of Enzymes,
Mechanism of enzyme action (Models),
Factors affecting rate of enzyme action,
Enzyme inhibition

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Start Quiz



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24 : 30



1/30



25 min



Hint

Q : Most abundant component of the cell is:

A

Proteins

B

Lipids

C

Carbohydrates

D

Water

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1

2

3

4

5

6

7

24 : 28



2/30



25 min



Hint

Q : Living organisms use water as thermo-stabilizer, due to its ____ property:

A

Heat of vaporization

B

Heat capacity

C

Heat of sublimation

D

Heat of ionization

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1

2

3

4

5

6

7

24 : 26



3/30



25 min



Hint

Q : Water flows freely without breaking apart due to its:

A

Adhesive force

B

Suspended force

C

Cohesive force

D

Additive force

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1

2

3

4

5

6

7

24 : 24



4/30



25 min



Hint

Q : It is not a carbohydrate:

A

Starch

B

Glycogen

C

Chitin

D

Cutin

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1

2

3

4

5

6

7

24 : 22



5/30



25 min



Hint

Q : Number of carbon atoms within the ring of ribo-furanose is:



6



5



4



3

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1

2

3

4

5

6

7

24 : 20



6/30



25 min



Hint

Q : Monosaccharides are major components of:

A

DNA, ATP, Ribulose biophosphate and cysteine

B

DNA, NAD and Insulin

C

DNA, NADP, ATP and ribulose bisphosphate

D

DNA, RNA and myosin

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1

2

3

4

5

6

7

24 : 18



7/30



25 min



Hint

Q : Milk sugar is a/an:

A

Monosaccharide

B

Oligosaccharide

C

Disaccharide

D

Polysaccharide

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1

2

3

4

5

6

7

24 : 15



8/30



25 min



Hint

Q : It is a nitrogen containing polysaccharide:

A

Starch

B

Glycogen

C

Cellulose

D

Chitin

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7

8

9

10

11

12

13

24 : 13



9/30



25 min



Hint

Q : It is an example of globular protein:

A

Myosin

B

Fibroin

C

Fibrinogen

D

Keratin

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7

8

9

10

11

12

13



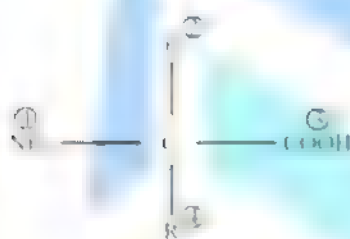
Q: 01/10

25 min



Q:

An amino acid molecule has the following structure:



Which two of the groups combine to form a peptide link?



1 and 2



1 and 3



2 and 3



3 and 4

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7

8

9

11

12

13

Q : A protein is always ____ in nature:

- ☐ Fibrous
- ☐ Polypeptide
- ☐ Pentapeptide
- ☐ Hydrophobic

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Q:

A scientist arranged myoglobin into proper order of its amino acids and calculated total amino acids in this molecule. He actually figured out:

- ☒ Primary structure of myoglobin
- ☐ Secondary structure of myoglobin
- ☐ Tertiary structure of myoglobin
- ☐ Quaternary structure of myoglobin

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Q : Which amino acid is essential for formation of disulphide linkages in proteins?

- ☐ A Glycine
- ☐ B Alanine
- ☐ C Serine
- ☒ D Cysteine

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MCQ

20 min

MCQ

Q : These are the group of lipids which are specialized for energy storage:

- ☐ A Acylglycerols
- ☐ B Phospholipids
- ☐ C Waxes
- ☐ D Terpenoids

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Q : Variability among different types of acylglycerols is due to:

- ☐ A Glycerols
- ☐ B Fatty acids
- ☐ C Ketones
- ☐ D Isoprenoid

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Q : It is not a component of phosphatidic acid:

- ☐ Glycerol
- ☐ Fatty acid
- ☐ Phosphoric acid
- ☐ Nitrogenous base

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Q : They are widespread in living organisms and are frequently associated with membranes:

- ☐ A Acylglycerols
- ☐ B Phospholipids
- ☐ C Waxes
- ☐ D Terpenoids

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Q : Which of the following represent high energy bonds in ATP?

- ☐ A Ribose – Adenine
- ☐ B Ribose – Phosphate
- ☐ C Phosphate – Adenine
- ☐ D Phosphate – Phosphate

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Q : How many water molecules are released during formation of an ATP molecule?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

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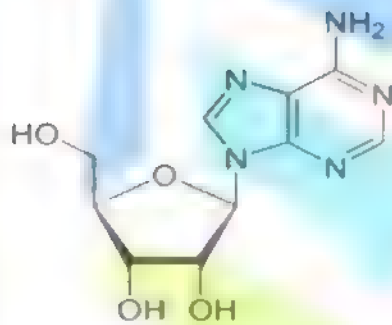
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Q:
Which one is correct about the following diagram?



- ☐ It is a nucleotide
- ☒ It contains pyrimidine nitrogen
- ☐ It is used to form DNA
- ☐ It is used to form RNA

Q : Which statement correctly describes messenger RNA (mRNA)?

- ☐ A mRNA binds amino acids for incorporation into proteins
- ☐ B mRNA contains the five-carbon sugar deoxyribose
- ☐ C mRNA is a double stranded helix
- ☐ D mRNA recognizes the anticodon of tRNA

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12/10



25 min



100%

Q : Two different molecules, belonging to two different categories, usually combine together to form _____:



Micro-molecules



Conjugated molecules



Amphoteric molecules



Zwitter ions

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23/10 20 min

Q : It is true for enzymes:

- ☐ Without enzymes, the metabolism would be very slow
- ☐ Enzymes initiate the reaction
- ☐ The reactants are substrate and enzyme
- ☐ All enzymes require co-factor

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Q : When apoenzyme is separated from its metal component, its activity is:

- ☐ A Decreased
- ☐ B Lost
- ☒ C Increased
- ☐ D Remains unaffected

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Q : Majority of the amino acids in enzyme molecule:

- ☐ A Form their active sites
- ☐ B Form their allosteric sites
- ☐ C Maintain globular shape of enzyme
- ☐ D Maintain shape of active site

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Q : Specificity of enzyme was first proposed by:

- ☐ Koshland
- ☐ Watson
- ☐ F. Griffith
- ☐ E. Fischer

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Q : In the given diagram, identify the parts labeled as M, N, O and P:



M
N

O

P

Product
Enzyme

Substrate
Co-enzyme

M
N
P

O

Active site
Substrate

Product
Co-enzyme

M
N
P

O

Substrate
Enzyme

Co-enzyme
Active site



M
N

P

O

Product
Enzyme

Substrate
Co-enzyme

M
N
P

O

Active site
Substrate

Product
Co-enzyme

M
N
P

O

Substrate
Enzyme

Co-enzyme
Active site

M
N
P

O

Enzyme
Active site

Inhibitor
Product

Q : The rate of reaction depends directly on the amount of enzyme present at a specific time at:

- ☐ A Limited substrate concentration
- ☐ B Unlimited enzyme concentration
- ☐ C Unlimited substrate concentration
- ☐ D Limited enzyme concentration

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2019 20 min 100%

Q : Which of the followings is never inhibitor?

- ☐ Substrate
- ☐ ATP
- ☒ Product
- ☐ Antibiotic

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Q : Malonic acid is an example of reversible inhibitor; it inhibits succinic acid dehydrogenase by:

- ☐ Forming weak linkage with active site
- ☐ Forming weak linkage with allosteric site
- ☐ Forming covalent bond with active site
- ☐ Forming covalent bond with allosteric site

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QUIZ RESULT

Unit Wise Test-2 (Biological
Molecules and Enzymes)



0/10



2:00:00



27 Feb 2021



0:00:00



0/30



0.0%

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SAEEDMDCAT





Correct



Wrong/Cancelled



Incorrect



1/50

Q : Most abundant component of the cell is:



Proteins



Lipids



Carbohydrates



Water

Explanation

Water is most abundant component of any cell. Proteins are most abundant organic compounds.



SAEEDMDCAT



Correct



Incorrect



Incorrect



2/30

Q : Living organisms use water as thermo-stabilizer, due to its ____ property:



Heat of vaporization



Heat capacity



Heat of sublimation



Heat of ionization

Explanation

SAEED MDCAT TEAM

Water absorb large amount of heat without changing its temperature.



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Correct



Incorrect



Incorrect



3/30

Q : Water flows freely without breaking apart due to its:



A Adhesive force



B Suspended force



C Cohesive force



D Additive force

Explanation

Rapid formation, dissociation, and reformation of hydrogen bonding maintains the fluidity of water.



Correct



Wrong/Cancelled



Incorrect



4/5

Q : It is not a carbohydrate:



Starch



Glycogen



Chitin



Cutin

Explanation

Cutin is one of the two waxy polymers that are the main components of the plant cuticle, which covers all aerial surfaces of plants.



Correct



Incorrect



Incorrect



5/25

Q : Number of carbon atoms within the ring of ribo-furanose is:



6



5



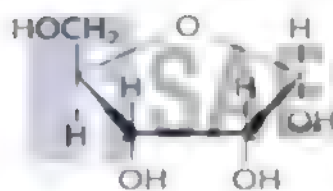
4



3

Explanation

SAEED MDCAT TEAM





Correct



Incorrect



Incorrect



6/20

Q : Monosaccharides are major components of:



DNA, ATP, Ribulose biophosphate and cysteine



DNA, NAD and Insulin



DNA, NADP, ATP and ribulose bisphosphate



DNA, RNA and myosin

Explanation

SAEED MDCAT TEAM

1. Cystein is amino acid.
2. Insulin contains amino acids.
3. Myosin contains amino acids.



Correct



Incorrect



Incorrect



7/30

Q : Milk sugar is a/an:



Monosaccharide



Oligosaccharide



Disaccharide



Polysaccharide

Explanation

Lactose is milk sugar and disaccharide.



SAEEDMDCAT



Correct



Wrong/Cancelled



Incorrect



8/35

Q : It is a nitrogen containing polysaccharide:



Starch



Glycogen



Cellulose



Chitin

Explanation

Basic unit of chitin is N-acetyl β -glucosamine.



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Correct



Wrong/Removed



Incorrect



9/31

Q : It is an example of globular protein:



Myosin



Fibroin



Fibrinogen



Keratin

Explanation

- Fibroin is silk protein.
- Fibrinogen is globular while fibrin is fibrous.



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Correct



Unattempted



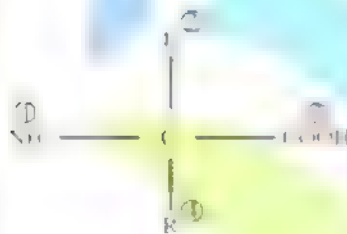
Incorrect



10/20

Q:

An amino acid molecule has the following structure:



Which two of the groups combine to form a peptide link?



1 and 2



1 and 3



2 and 3



3 and 4



Correct



File Removed



Incorrect



11/3

Q : A protein is always _____ in nature:



Fibrous



Polypeptide



Pentapeptide



Hydrophobic

Explanation

- Proteins can be fibrous or globular.
- Proteins is always polypeptide.
- Protein has both hydrophilic and hydrophobic parts



Incorrect



12/30

Q:

A scientist arranged myoglobin into proper order of its amino acids and calculated total amino acids in this molecule. He actually figured out:



Primary structure of myoglobin



Secondary structure of myoglobin



Tertiary structure of myoglobin



Quaternary structure of myoglobin

Explanation

Primary structure is related with number and sequence of amino acids in a polypeptide chain.



Correct



Wrong Answered



Incorrect



13/50

Q : Which amino acid is essential for formation of disulphide linkages in proteins?



Glycine



Alanine



Serine



Cysteine

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Explanation

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Cysteine is sulphur containing amino acid.



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Correct



Incorrect



Incorrect



14/20

Q : These are the group of lipids which are specialized for energy storage:



Acylglycerols



Phospholipids



Waxes



Terpenoids

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Explanation

SAEED MDCAT TEAM

Triglycerides are main energy reserves in living organisms.

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Correct



Incorrect



Incorrect



15/20

Q : Variability among different types of acylglycerols is due to:



Glycerols



Fatty acids



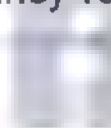
Ketones



Isoprenoid

Explanation

Glycerol is same in all acylglycerols while they vary on base of type of fatty acid.



SAEEDMDCAT



Correct



Wrong Answered



Incorrect



16/01

Q : It is not a component of phosphatidic acid:



Glycerol



Fatty acid



Phosphoric acid



Nitrogenous base

Explanation

Phosphatidic acid contains 1 glycerol, 2 fatty acids and 1 phosphoric acid.



SAEEDMDCAT



Correct



Incorrect



Incorrect



17/18

Q : They are widespread in living organisms and are frequently associated with membranes:



Acylglycerols



Phospholipids



Waxes



Terpenoids

Explanation

SAEED MDCAT TEAM

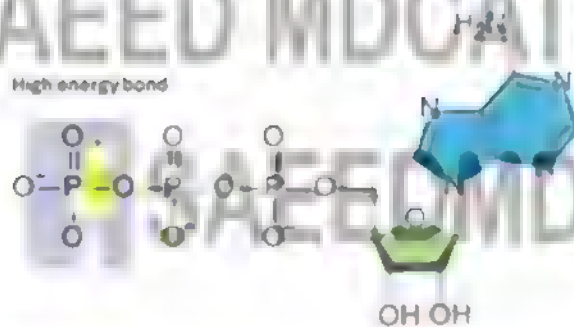
Phospholipids form lipids form lipid bilayer in all types of membranes in prokaryotic and eukaryotic cells.

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Q : Which of the following represent high energy bonds in ATP?

- ☐ Ribose – Adenine
- ☐ Ribose – Phosphate
- ☐ Phosphate – Adenine
- ☒ Phosphate – Phosphate

Explanation



Q : How many water molecules are released during formation of an ATP molecule?

1

2

3

4

Explanation

SAEED MDCAT TEAM

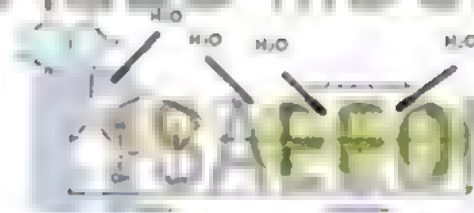
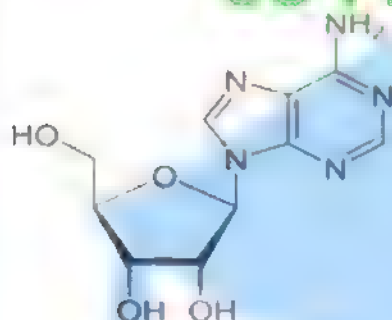


Diagram:

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- ☐ It is a nucleotide
- ☐ It contains pyrimidine nitrogen
- ☐ It is used to form DNA
- ☒ It is used to form RNA

Explanation

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- It is a **nucleoside** as it does not contain phosphate group.
- It is used to form RNA as it contains ribose sugar.



Incorrect



21/30

Q : Which statement correctly describes messenger RNA (mRNA)?



mRNA binds amino acids for incorporation into proteins



mRNA contains the five-carbon sugar deoxyribose



mRNA is a double stranded helix



mRNA recognizes the anticodon of tRNA

Explanation

tRNA binds with amino acid instead of mRNA.

A) mRNA contains ribose instead of deoxyribose.

B) mRNA is always single stranded and does not form helix.



Correct



Unattempted



Incorrect



22/30

Q : Two different molecules, belonging to two different categories, usually combine together to form _____:



Micro-molecules



Conjugated molecules



Amphoteric molecules



Zwitter ions

Explanation

Conjugated molecules are formed when a chemical bond is established between two different molecules, belonging to two different categories.

Incorrect

23/10/20

Q : It is true for enzymes:



Without enzymes, the metabolism would be very slow



Enzymes initiate the reaction



The reactants are substrate and enzyme



All enzymes require co-factor

Explanation

A) Enzymes do not initiate reactions instead catalyze already occurring reactions.

B) Enzyme in a reaction acts as catalyst instead of reactant.

C) Co-factor is required by few enzymes.



Correct



Wrong Answered



Incorrect



24,

Q : When apoenzyme is separated from its metal component, its activity is:



Decreased



Lost



Increased



Remains unaffected

Explanation

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Holoenzyme (Activated Enzyme) – Co-Factor = Apoenzyme (Inactive Enzyme)



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Correct



Incorrect



Incorrect



25, 41

Q : Majority of the amino acids in enzyme molecule:



Form their active sites



Form their allosteric sites



Maintain globular shape of enzyme



Maintain shape of active site

Explanation

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One enzyme can be having minimum thousand amino acids in numbers and 3-12 are only +ve part of active site.



Correct



Wrong Answer



Incorrect



26/11

Q : Specificity of enzyme was first proposed by:



Koshland



Watson



F. Griffith



E. Fischer

Explanation

Both models emphasize on specificity of enzymes.



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Direct

2/1/18

Q : In the given diagram, identify the parts labeled as M, N, O and P:



M
N

O

P



Product
Enzyme

Substrate

Co-enzyme

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M
N
P

O

Active site
Substrate

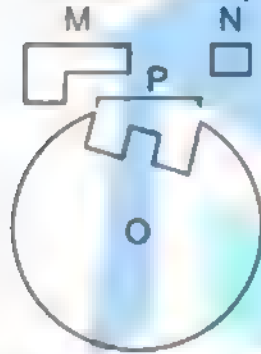
Product
Co-enzyme

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M
N
-

O

Q : In the given diagram, identify the parts labeled as M, N, O and P:



M
N

O

P



Product
Enzyme

Substrate
Co-enzyme



M
N
P

O

Active site
Substrate

Product
Co-enzyme



M
N
P

O

Substrate
Enzyme

Co-enzyme
Active site



Correct



Unattempted



Incorrect



28/40

Q : The rate of reaction depends directly on the amount of enzyme present at a specific time at:



Limited substrate concentration



Unlimited enzyme concentration



Unlimited substrate concentration



Limited enzyme concentration

Explanation

At unlimited substrate concentration, rate of reaction depends upon enzyme.



Correct



Unattempted



Incorrect



29/30

Q : Which of the followings is never inhibitor?



Substrate



ATP



Product



Antibiotic

Explanation

- Reaction product and ATP are involved in feedback inhibition.

Antibiotics act as inhibitors of bacterial enzymes.



Correct



Unattempted



Incorrect



29/30

Q : Which of the followings is never inhibitor?



Substrate



ATP



Product



Antibiotic

Explanation

- Reaction product and ATP are involved in feedback inhibition.

Antibiotics act as inhibitors of bacterial enzymes.



Incorrect



Q 10/30

Q : Malonic acid is an example of reversible inhibitor; it inhibits succinic acid dehydrogenase by:

A

Forming weak linkage with active site

B

Forming weak linkage with allosteric site

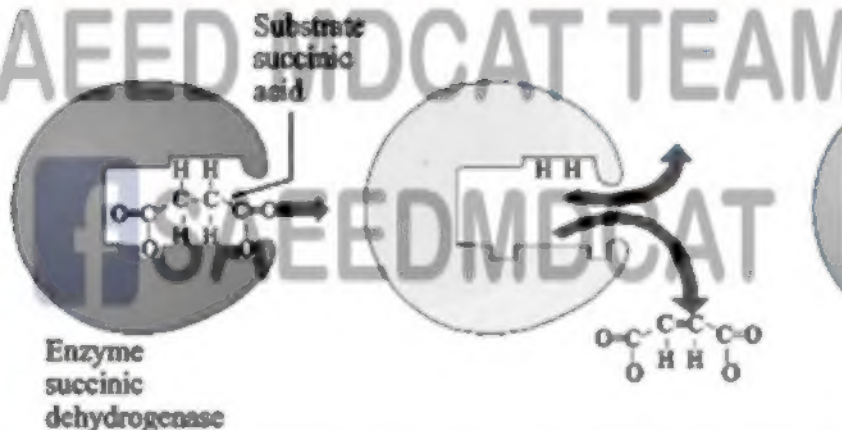
C

Forming covalent bond with active site

D

Forming covalent bond with allosteric site

Explanation





Incorrect



20/20

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Q : Malonic acid is an example of reversible inhibitor; it inhibits succinic acid dehydrogenase by:

A

Forming weak linkage with active site

B

Forming weak linkage with allosteric site

C

Forming covalent bond with active site

D

Forming covalent bond with allosteric site

Explanation

